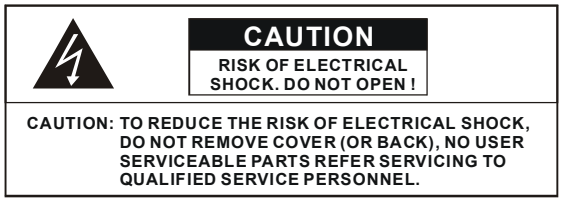
Thank you for purchasing our product.
Please read this User's Manual before
using the product. Change without Notice

4 / 8 Channel Mobile DVR

# User's Manual

## Safety Precautions


CAUTION
RISK OF ELECTRICAL SHOCK. DO NOT OPEN !
CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER (OR BACK), NO USER SERVICEABLE PARTS REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of insulated dangerous Voltage within the product's enclosure that may be sufficient magnitude to constitute risk of electrical shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operation and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE UNITS NOT SPECIFICALLY DESIGNED FOR

Attention: installation should be performed by qualified service Personnel only in accordance with the National Electrical Code or applicable local codes.

Power Disconnect. Units with or without ON-OFF switches have power supplied to the unit whenever the power cord is inserted into the power source; however, the unit is operational only when the ON-OFF switch is the ON position. The power cord is the main power disconnect for all unites.

Warranty and Service

There are no serviceable parts for this unit, call for your agent for details.

## About this document

Before installing stand alone DVR, be sure to thoroughly review and follow the instructions in this User's Manual. Pay particular attention to the parts that are marked **NOTICE**.
Also, when connecting with external application, first turn the power OFF and follow manual instruction for appropriate installation.

## Before reading this document

1. This document is intended for both the administrator and users of stand alone DVR Model.
2. This manual contains information for configuring, managing and using stand alone DVR Model.
3. To prevent fire or electrical shock, do not expose the product to heat or moisture.
4. Be sure to read this manual before using stand alone DVR Model.
5. For questions and technical assistance of this product, contact your local dealer.

►Strong recommendation on installation of the DVR unit

1. Check electricity at the place you want to install the DVR unit is stable and meets our electricity requirements. Unstable electricity will cause malfunction of the unit or give critical damage to the unit.
2. Several chips on the main board of the DVR unit and hard disk drive inside the unit generate heat, and it must be properly discharged. Do not put any objects just beside exhaust port(fan) on the left side of the unit and do not close up an opening (fresh air in-take) on the right side of the unit..

**FCC Statement:**

**WARNING**

This device complies with Part 15 FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference. (2) This device must accept any interference received including interference that may cause undesired operation."

*** Federal Communications Commission (FCC) Statement**

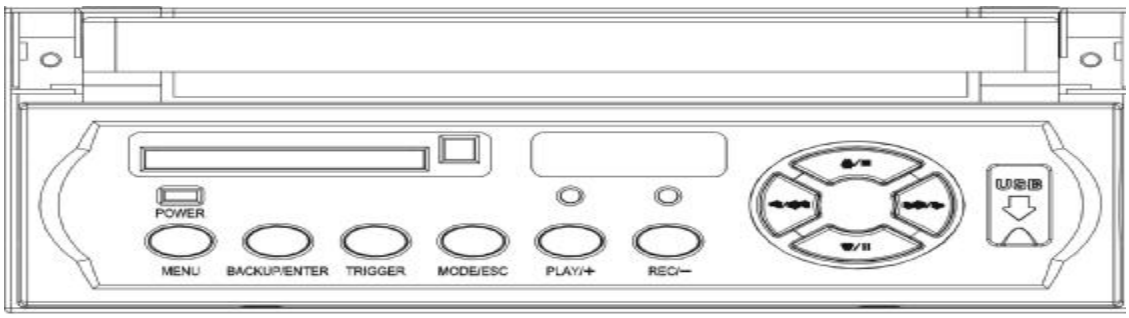
**WARNING**

This Equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

* You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

## FRONT PANEL




**1. MENU BUTTON** : Press this button to display the menu setup

**2. BACKUP/ENTER** : Image backup button / Value change

**3. TRIGGER** : Emergency record

**4. MODE/ESC** : Quad mode / / Full channel select / OSD exit

**5. PLAY/+** : Video playback button **/** Increase values change

**6. REC/-** : Record button **/** Reduce values change

**7. UP / STOP** : Direction button UP / Playback stop button ▲ / ■

**8. DOWN / PAUSE** : Direction button down / Playback pause ▼ /▮▮ (Step play)

**9. REW** : Reverse playback choose button / play speed ◀ / ◀◀

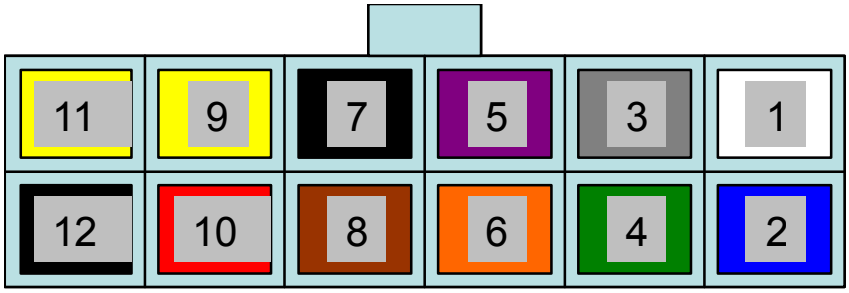
**10. FF** : Forward playback choose button / play speed ▶ / ▶▶

**11. USB 2.0** : Pan Driver slot

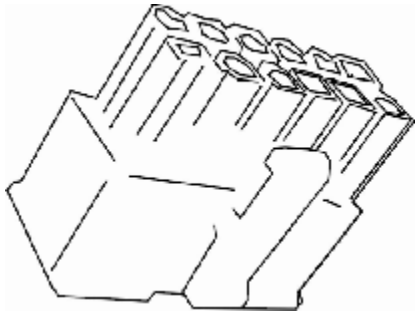
**12. CF Card** : CF Card Driver slot

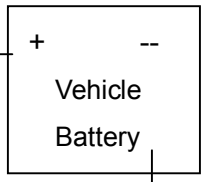
## REAR PANEL (TYPE A : 4 CH device )

**Power and alarm cables**

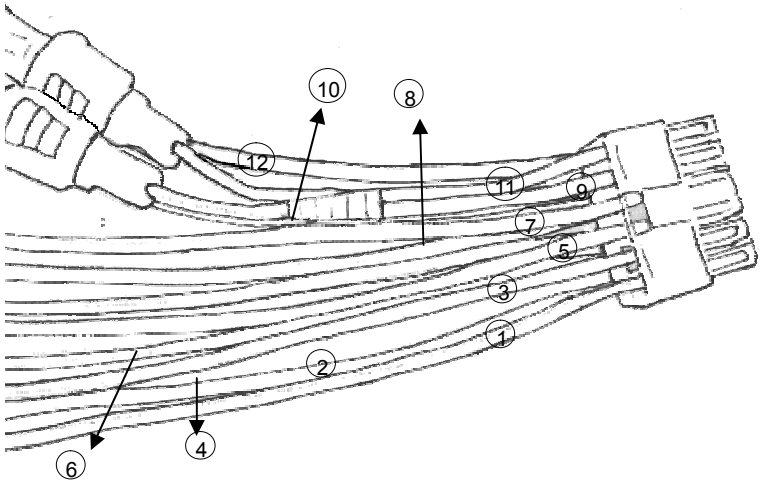



| | |
|---|---|
| Pin1: RLNC | Relay NC |
| Pin2: ALARM4 | Alarm 4 |
| Pin3: RLNO | Relay NO |
| Pin4: ALARM3 | Alarm 3 |
| Pin5: RLCOM | Alarm COM |
| PIN6: ALARM2 | Alarm 2 |
| PIN7: OGND | Alarm GND |
| PIN8: ALARM1 | Alarm 1 |
| PIN9: BAT_IN | Battery + |
| PIN10: ACC_Power | ACC_Connection |
| PIN11: BAT_IN | Battery + |
| PIN12: BAT_GND | Battery GND |



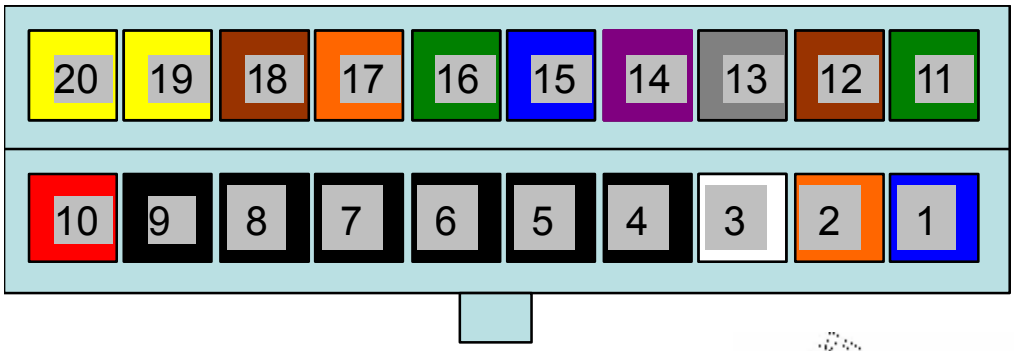



Pin1: RLNC (White)
Pin2: ALARM4 (Blue)
Pin3: RLNO (Gray)
Pin4: ALARM3 (Green)
Pin5: RLCOM (Purple)
PIN6: ALARM2 (Orange)
PIN7: OGND (Black)
PIN8: ALARM1 (Brown)
PIN9: BAT_IN (Yellow)
PIN10: ACC_Power (Red)
PIN11: BAT_IN (Yellow)
PIN12: BAT_GND (Black)

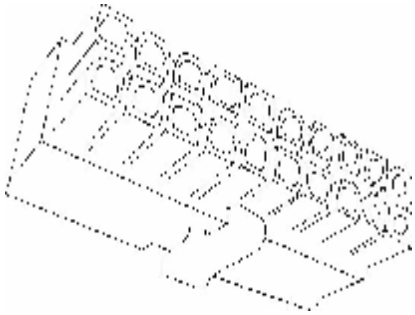



**Notice: System will startup when ACC power connection input is high.**

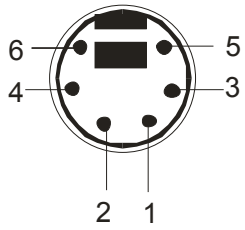
## REAR PANEL (TYPE B : 8 CH device )




| | | |
|---|---|---|
| Pin1 | RLNC (Blue) | Relay NC |
| Pin2 | RLNO (Orange) | Relay NO |
| Pin3 | RLCOM (White) | Alarm COM |
| Pin4 | OGND (Black) | Alarm GND |
| Pin5 | OGND (Black) | Alarm GND |
| PIN6 | OGND (Black) | Alarm GND |
| PIN7 | OGND (Black) | Alarm GND |
| PIN8 | OGND (Black) | Alarm GND |
| PIN9 | BAT_GND(Black) | Battery GND |
| PIN10 | ACC_Power (Red) | ACC_Connection |
| PIN11 | ALARM 8 (Green) | Alarm 8 |
| PIN12 | ALARM 7 (Brown) | Alarm 7 |
| PIN13 | ALARM 6 (Gray) | Alarm 6 |
| PIN14 | ALARM 5(Purple) | Alarm 5 |
| PIN15 | ALARM 4 (Blue) | Alarm 4 |
| PIN16 | ALARM 3 (Green) | Alarm 3 |
| PIN17 | ALARM 2 (Orange) | Alarm 2 |
| PIN18 | ALARM 1 (Brown) | Alarm 1 |
| PIN19 | BAT_IN (Yellow) | Battery + |
| PIN20 | BAT_IN (Yellow) | Battery + |



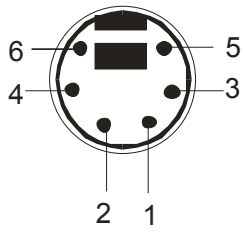
**25 Pin Mini Din Pin definition (Female) :**




Standard

*** TYPE 1 (Standard ):**

1. -----  4. GND
2. -----  5. +12V
3. Audio  6. Video



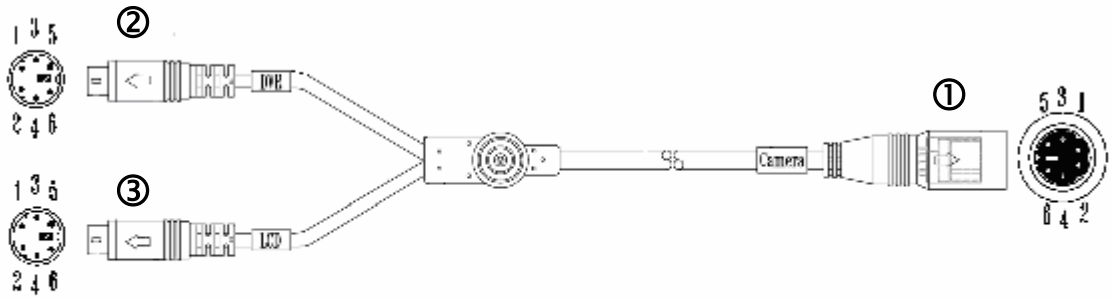

Option

*** TYPE 2 (Option):**

1. GND  4. +12V
2. ------  5. -----
3. Video  6. Audio

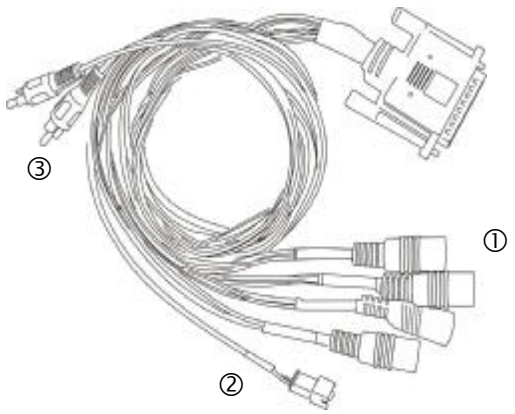
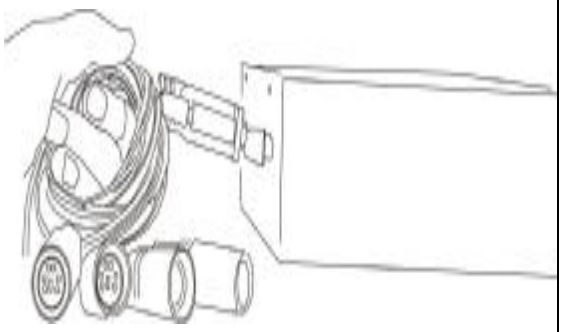
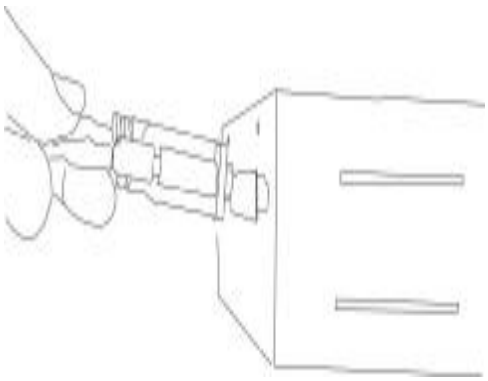
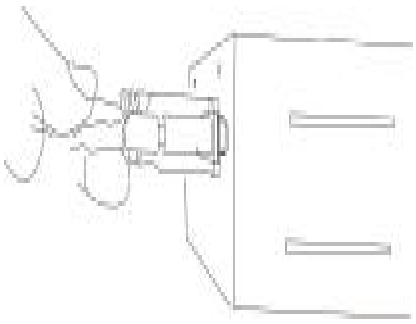
**Y Cable Function :**

1. Use the Y Cable , it ensures that only the DVR can supply power to the Camera .
2. The camera can output the video single to DVR and LCD at the same time via the Y Cable .




| | |
|---|---|
| ① | Mini Din : 6 pin Female connector , connect to Camera . |
| ② | Mini Din : 6 pin Male connector , connect to DVR. |
| ③ | Mini Din : 6 pin Male connector , connect to LCD. |

Cables define: Video / Audio / IR sensor extending

<table>
<tr><td rowspan="3"> 
</td><td>1.</td><td>Camera 1 ~ 4 input (or 1 ~ 8 input)<br>Mini din<br>Notice: NTSC or PAL is auto detected by video in channel 1</td></tr>
<tr><td>2.</td><td>IR sensor extended line</td></tr>
<tr><td>3.</td><td>Video out (RCA)<br>Audio out (RCA)</td></tr>
<tr><td>  </td><td colspan="2">Please confirm the direction of cable and DVR D type connector</td></tr>
<tr><td>  </td><td colspan="2">After direction confirmed, please connect the cable</td></tr>
<tr><td>  </td><td colspan="2">To make sure the cable is connect to the rear side of DVR</td></tr>
</table>

**DVR**

**Live mode**

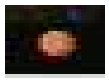
**Playback mode**

**Indicator:**

**Live:**

Live mode

Video loss

 Recording

Overwrite

Motion

Alarm

Relay (Motion / Alarm)

Channel sequence

Keypad lock * 111111 is the default password

*** Overwrite (Disk usage with record device)**

**Playback:**

Forward

Reverse

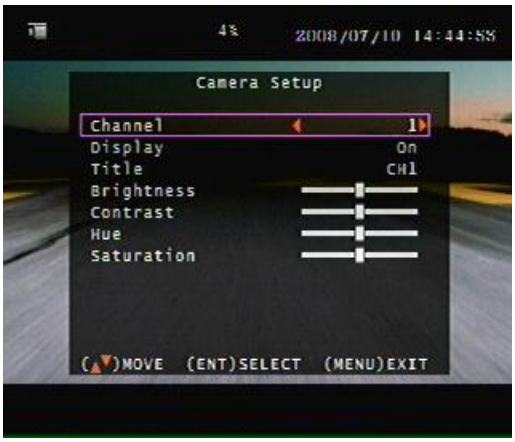
Pause

**Remote controller:**

The key on the remote controller function control is same as the front keypad of the unit.

| | |
|---|---|
| **TRIGGER** | Emergency record |
| **SHIFT** | Switch the channel button<br>Ch 1 ~ 4 / ch 5 ~ 8 |
| **Number** | Channel select 1 ~ 4 / 5 ~ 8<br>(Need use SHIFT key to switch) |
| **Quad** | / screen display |
| **UP / STOP** | Direction button up / Playback stop button |
| **REW** | Reverse playback choose button |
| **DOWN / PAUSE** | Direction button down / Playback pause |
| **FF** | Forward playback choose button |
| **ENTER** | Enter button or value change |
| **AUTO** | Full screen auto sequence |
| **MENU** | OSD Menu |
| **REC** | Start / Stop record |
| **BACKUP** | Image backup |
| **ESC** | OSD exit |
| **PLAY** | Run playback mode |
| **LOCK** | To button key lock |
| **AUDIO** | Audio page display |
| **+** | Increase + values change |
| **-** | Reduce - values change |

**Main Menu – Camera Setup**



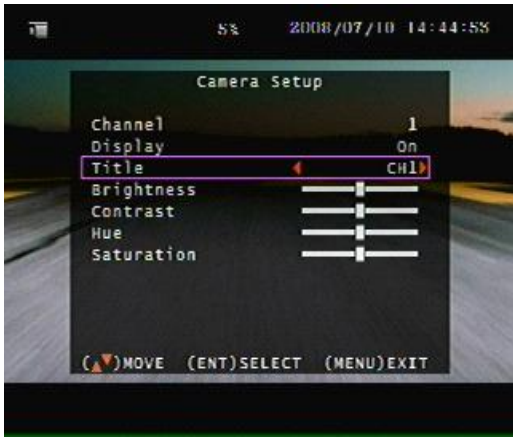

Right adjustment of each element will increase picture quarterly displayed. We recommend you to adjust each element of cameras and monitor to be connected to the DVR unit.

**Main menu – Camera Setup – Display**

The function is for channel mask.

**Main menu – Camera Setup – Title**

Camera title setup function allows 5 characters for each channel.



Select Shift to next page and then Enter to confirm camera title.

**Main Menu – Record Setup**

**Device & Frame rate set – Record Device**

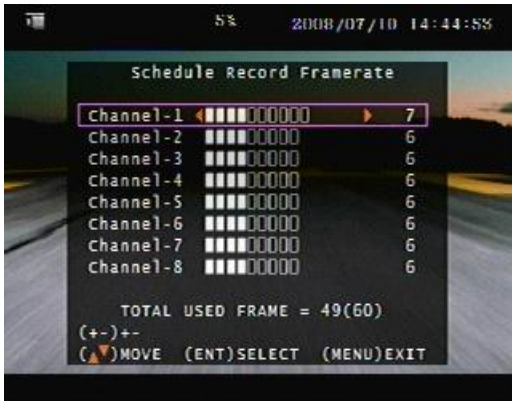
**Record Device – User selectable in different record device**

N: Normal Record Device

E: Event Record Device

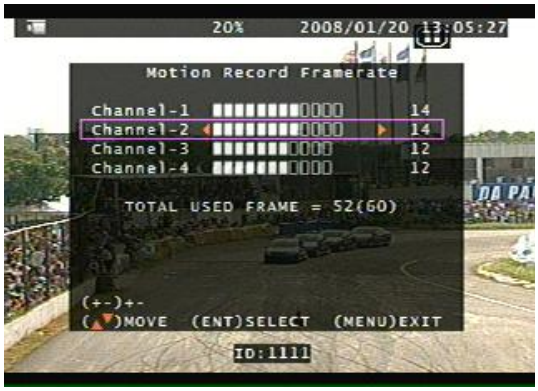
| N:Normal Record<br>E:Event Record | Hard disk(HDD) | CF card (CF) | Process |
|---|---|---|---|
| N:E:HDD | Normal / Event record | ------- | The video data always record to hard disk |
| N:E:CF | ------- | Normal / Event record | The video data always record to CF card |
| N:HDD E:CF | Normal record | Event record | Normally the video records to hard disk, but it records to CF card if there is any event happens. |

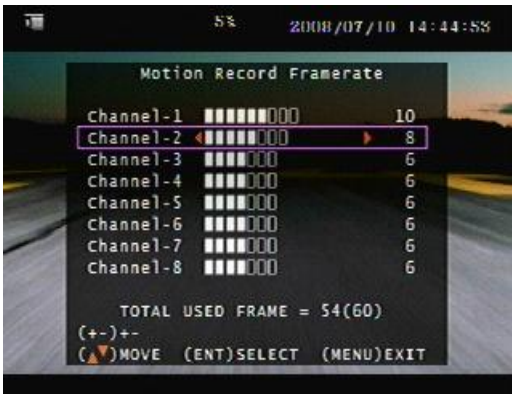
**Device & Frame rate set - Schedule Record Frame rate**




**( 4 Channels)** **( 8 Channels)**

**Device & Frame rate set - Motion Record Frame rate**




**( 4 Channels)** **( 8 Channels)**

**Device & Frame rate set - Alarm Record Frame rate**

**( 4 Channels)** **( 8 Channels)**

**Record Setup:**

| | |
|---|---|
| **Pre-record Set** | OFF / 1MB/2MB/3MB/4MB/5MB/6MB/7MB/8MB<br>pre alarm/motion/trigger record |
| **Power off Record** | OFF / 1 ~ 30 minutes. DVR starts to record automatically after vehicles engine power off |
| **Record Quality:** | Low / Normal / High (See record time table page 13) |
| **Event Rec Duration** | OFF / 5 ~ 30 seconds. Duration time recording after event (alarm / motion / trigger ) |
| **Auto Record** | When Auto Record is set to “On”, the DVR will start recording again after 2 minutes of inactivity after being manually stopped. |
| **Data Retention** | OFF / 1 ~ 15 days selectable |

**Notice: 1. Power off record : User have to think about how much time to record after the car power off , if power off record parameter(time) set too long , it might cause the car battery low . (Default setting is off ) .**

**2. Pre-Record : Pre-Record frame rate follows the schedule record frame rate .**

**3. Don’t remove CF card when the system is working , it does not support hot swap function .**

**4. Pre-record function can work normally only when normal record function stop record .**

**Main menu - Record Setup – Schedule Record**

2008/07/10 14:44:55
Schedule Record
0 0 0 0 0 1 1 1 1 1 2 2
0 2 4 6 8 0 2 4 6 8 0 2
No Record
Schedule Record
Motion Record
Alarm Record
Schedule + MD + Alarm Record
(▲▼)MOVE (ENT)SELECT (MENU)EXIT

**Notice:**

1. Each channel has own frame rate adjustment of different recording mode.
2. In 24 hours, user can adjust each channel frame rate of different record mode. Such as schedule, motion detection, and alarm record mode
3. Press “BACKUP/ENTER” button to change different record mode

**Record Time Table:** 80GB HD

**Record Quality:** Low. Average: 5 KB;

| REC FPS(total) | 60 | 30 | 15 | 10 |
|---|---|---|---|---|
| REC Hour | 72 hr | 148 hr | 296 hr | 444 hr |

**Record Quality:** Normal. Average 10 KB;

| REC FPS(total) | 60 | 30 | 15 | 10 |
|---|---|---|---|---|
| REC Hour | 36 hr | 74 hr | 148 hr | 222 hr |

**Record Quality:** High. Average 20 KB;

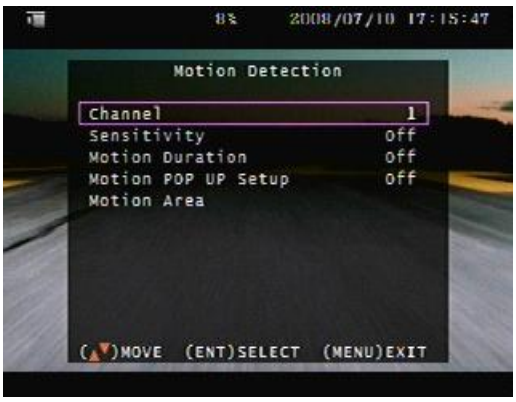
| REC FPS(total) | 60 | 30 | 15 | 10 |
|---|---|---|---|---|
| REC Hour | 18 hr | 37 hr | 74 hr | 111 hr |

**Actual recording time is base on live environment. This table is only for reference.**

20 K x 30 (frame rate) x 60 (mins) x 60 (secs) = 2160000 K = 2160 M / hr

2160 M / hr x 24 = 51840000 K = 51840 M = 51.84 G / (1 Day)

**Main Menu – Alarm Detection & Motion Detection**




Alarm 1 + GND / Alarm 2 + GND / Alarm 3 + GND / Alarm 4 + GND
The Alarm Signal type depends upon the Alarm Sensor polarity defined as NO (Normal Open) or NC (Normal Close).

**Notice :**

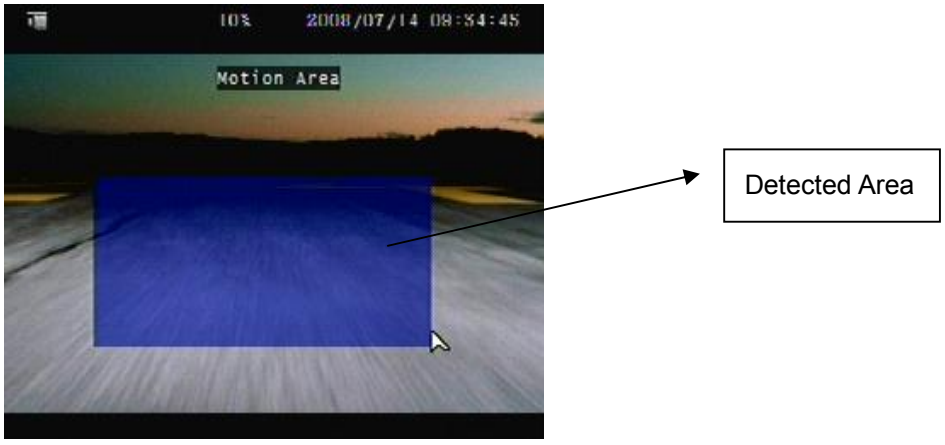
**Type A : Support 4 sets Alarm input .**

**Type B : Support 8 sets Alarm input .**

Alarm POP UP: Event channel jumps to full screen when alarm triggered. Quad screen or 9 split screen with the alarm symbol if more than two cameras triggered.

Relay: NO + COM or NC + COM
Alarm Signal type depends on Alarm Sensor polarity define on NO (N/Open) or NC (N/Close) mode.
NO + COM: Normally, motion relay is NO + COM connector.

**Main Menu – Motion Detection – Motion Area**



**Main Menu – Motion Detection – Motion area selection**

Direction button Left or Right + ENTER to cancel detection area.

Select start (right-up corner) point and end (left-below corner) point of detect area.

**Main Menu – SCREEN:** Split border on or off select.

**Video Adjustment:** Video screen position movement. Use direction button to move.

**Main Menu – Audio Setup**

- If microphone, audio line in or any how, user please set the audio record mode to on and also adjust volume input or output to right sound effects.

- Mute means live audio is turn on or quiet.

**Notice: Audio input is from Cam1.**

**Main Menu – System Setup – Device ID**

Totally,
The device ID could be set 1 ~ 4000 for management. ( 4 CH)

The device ID could be set 1 ~ 255 for management. ( 8 CH)

**Main Menu – System Setup – Storage Setup**

Please format hard disk before starting recording

**MENU – System Setup – Security Protection – Password Change (Default is 111111)**

**Menu Protection:**
On / Off. User needs to login password before enter to menu.
**Auto Key Lock:**
After 5 ~ 120 seconds system automatically key lock which means before operate DVR user needs to unlock.

**Main Menu – System Setup – Time Setup**

1. Press ENTER to login to date and time adjust. 2. Use direction left or right button to change the data. 3. Press ENTER to select date and time.

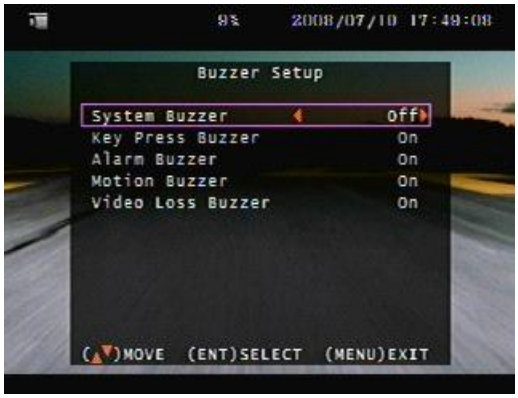
After time set or daylight mode turns to on, user needs to Apply and confirm. 0 ~ 9 is repeatable with increase + button, and decrease - button is opposite.

**Date Format:** YYYY/MM/DD; MM/DD/YYY; DD/MM/YYYY

**Main Menu – System Setup – Dwell Time setup** (Channel auto sequence mode setup)

On live mode, press auto to start full channel sequence. Duration time is base on dwell time 1 ~ 999 seconds.

**Main Menu – System Setup – Buzzer Setup**




System Buzzer: OS operating
Key Press Buzzer: Button operating
Alarm Buzzer: Alarm triggers warning
Motion Buzzer: Motion detection warning
Video Loss Buzzer: Camera video loss warning

**Main Menu – System Set – F/W Upgrade**

Stop all hard disk working before update, select F/W upgrade and then press ENTER to search firmware.

1. Searching Firmware
2. Press PLAY upload, press STOP cancel
3. Firmware Reading
4. Firmware uploading

DVR auto reboot after F/W update.

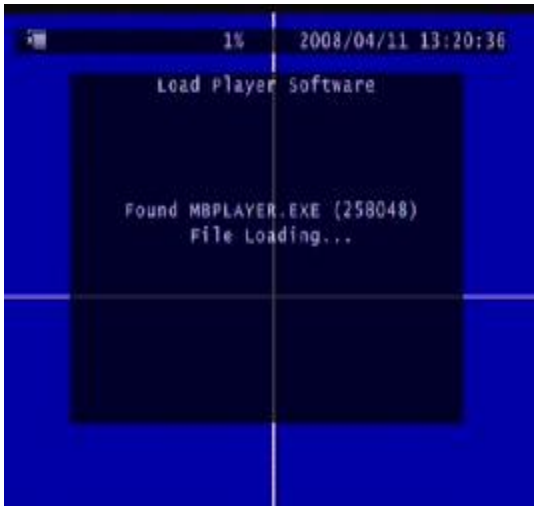
**Main Menu – System Set – Load Player Software**

Stop all hard disk working before load Player Software and then press ENTER

After press ENTER, the system will search software file from USB device.

After the file is detected, the system ask user to press ENTER to load file.

After press ENTER button, the system starts to load file from USB. Users please wait until "Done" message appears.



**Player Software is loaded in hard disk as factory default. Just in case if user change a new hard disk.**

**Main Menu – Search & Play button:**

Please select HDD or CF device before playback.

**Time List search mode & Event List search mode**

Use direction button up and down to select date and time section, and then press ENTER to start to playback. Time list 100 / Event list 200 / (HDD)

**Event list record way;**

EX:

A motion or an alarm event happens on 10:30 AM,

Record Setup – Pre-record (Pre-Alarm) Set: set to 8 MB .

Record Setup – Event Rec Duration (Post-Alarm): set to 8 MB .

User goes to event list search;

xxxxxxxxxxx 10:29:55 motion

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START: xxxxxx 10:29:55

END: xxxxxx 10:30:05

**Time Search:**

1. Press ENTER to login to date and time adjust.
2. Use direction left or right button to change the data.
3. Press ENTER to select date and time.

4. Press ESC to return to the previous screen and move cursor to Search.
5. Press ENTER to start the searching.
6. Wait until the unit starts to playback.

**Playback mode**

Forward speed: x 2 / x 3 / x 4

(Direction right button)

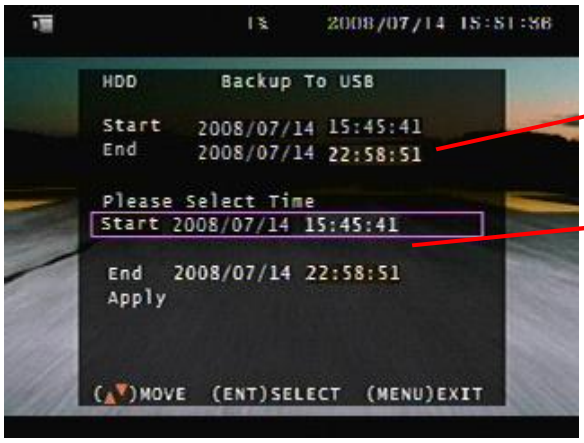
Reverse speed: x 8 / x 16 / x 32

(Direction left button)

Press STOP to search list, press ESC to live mode.

**Backup mode:** Before backup, USB pan driver is required. Back up file size can not exceed 3GB, when system reads USB (thumb driver only) device, the system will stop recording about 2 seconds

**Mode 1:** On live mode, press backup button to file backup page.



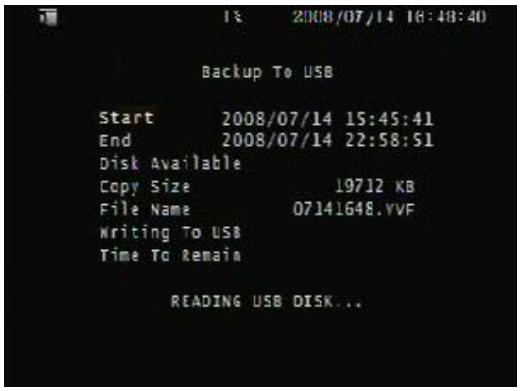

Total hard disk data time range

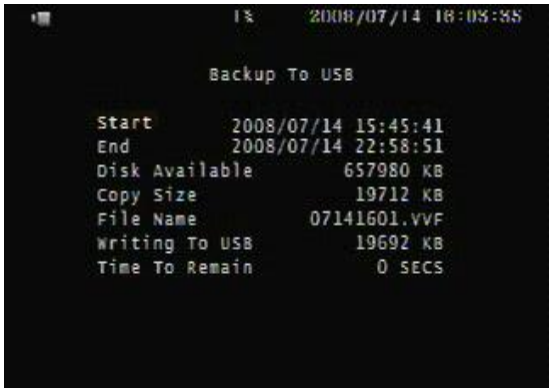
Select start and end time of backup

After select backup time, apply to count data size. After size appears, press backup button to USB page.

**Notice: When backup to USB , user can press front panel "Play" key to switch from HDD or CF card backup , it also have a indication show on the left top corner .**

After a while, all backup information display on screen, user now can press backup button to start file backup. Data is writing to USB pan drive, users please wait until backup complete. Press menu button to quit USB page.



**Mode 2:** In playback mode , Press backup button to select the backup start time , then press backup button second time means select the backup end time . The system will calculate the data size , user have to insert the USB device to USB slot then press backup button to start backup data .

**Mode 3:** On event list, choose an event record data, and then press backup button.

Pages go to USB page, after data size appears, press backup button to the page which is same as mode 1

**USB compatible( Max. 4G)**

ADATA / Transcend / San Disk / Kingston

**Main Menu – Language: Standard is English / Chinese;**

**Main Menu – Exit**

User needs to save changes if any function value has changed. And then exit menu.

**Trigger Record Function :**

When user press the front panel Trigger key , it means active “emergency record“ .

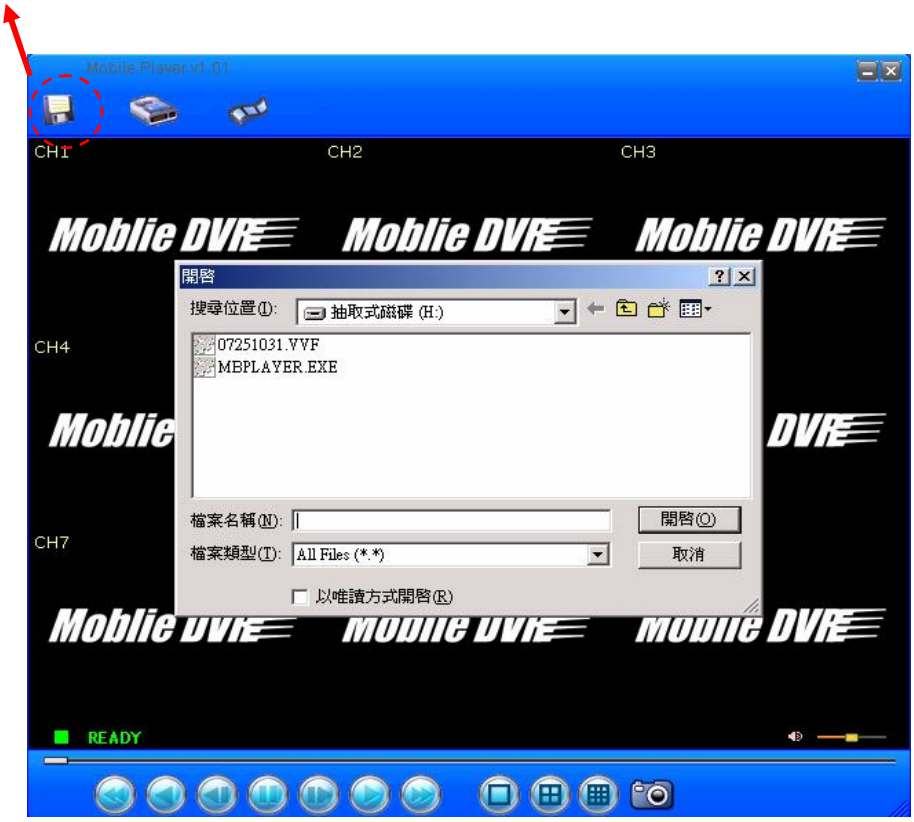
It will be saved a event record into event list .

Pre-alarm record frame rate follow schedule record frame rate .

Post-alarm record frame rate follows schedule record frame rate.

**Player Software**

**Open file**

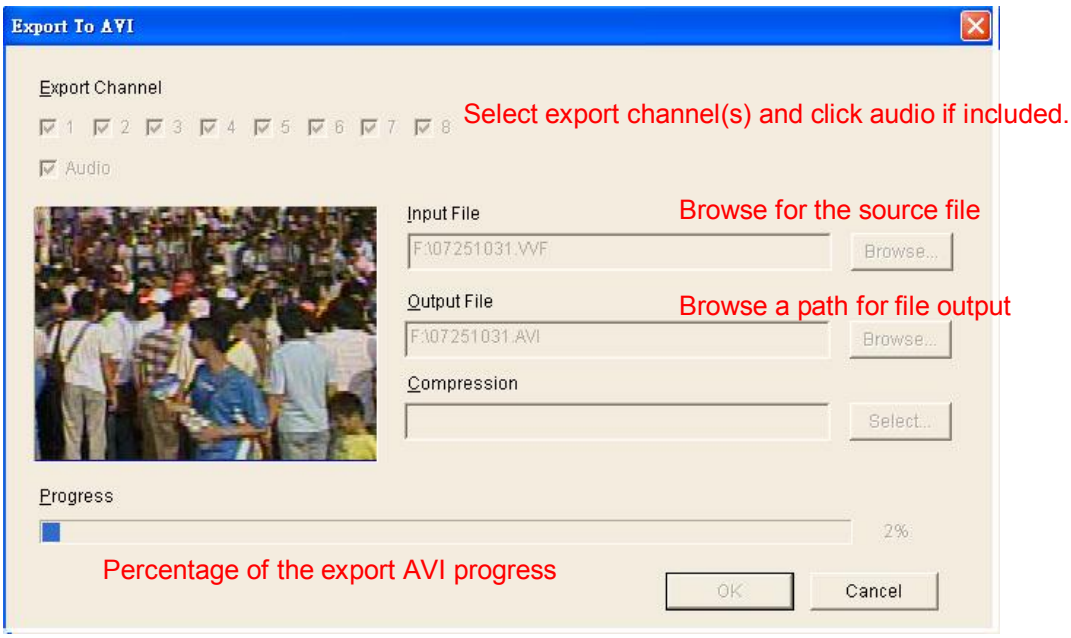


**Start to play;**

| | | | |
|---|---|---|---|
| 1 | Fast Reverse | 6 | Play |
| 2 | Play Reverse | 7 | Fast Forward |
| 3 | Previous Frame | 8 | Full Screen (manual switch) |
| 4 | Pause | 9 | Quad Screen<br>**9 split screen**<br>**(Only Type B support this function)** |
| 5 | Next Frame | 10 | Capture Image<br>(Default Save to C:\ Capture) |

**HDD readable in PC. Select hard disk and then click OK to start play.**

**AVI** Button: .vvf files export to .avi format



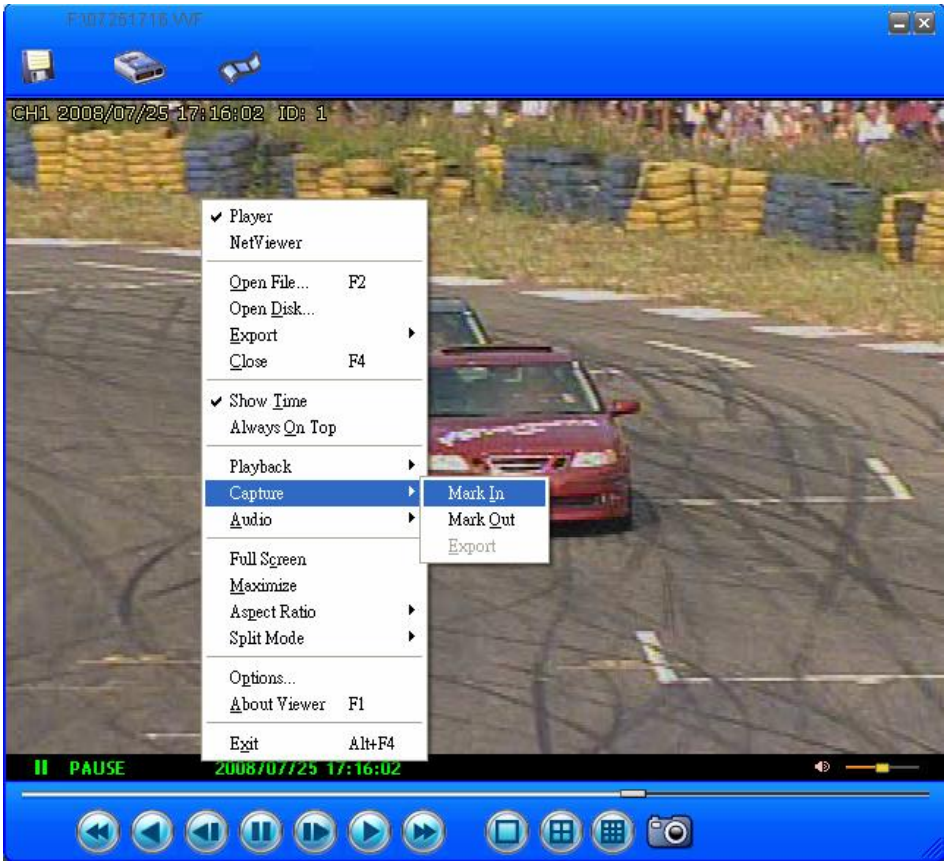
When use the player to play CF card backup file , it offers the Capture function and let user to capture video session from backup file .

Operation steps :

1. Open the backup file from the CF card .
2. Press Pause key to pause the screen and then click mouse (right key) , it will display menu then choose the **"Capture"** function . ( see below picture )
3. Choose the "**Mark In"** to set the capture start point .
4. Press play key to start play until user desire video screen .
5. Press pause key and choose the **"Mark out"** to set the capture end point .
6. Choose the **"Export"** , then user can export this session of video from backup file .

**Notice :**

**When start to export the video , the computer will be in busy state , user have to wait until the operation stop** 。



**Specifications**

| | | |
|---|---|---|
| | Mobile DVR | |
| **Model** | 4 CH | 8 CH |
| Input | 4 CH Inputs | 8 CH Inputs |
| | 1.0Vp-p, 75ohm unbalanced (mini din Type) | |
| Output | Main monitor (RCA type) x 1 | |
| S/N Ratio | More than 40dB | |
| Color | 6.7 Million | |
| **Monitoring Method** | | |
| Channel Display | Single / Quad channel | Single / Quad / 9 channels |
| Sequence Display | Available | |
| Screen Quality | 704(H)x 448(V) Active Pixels(NTSC);<br>704(H) x 544(V) Active Pixels (PAL) | |
| Display Rate | 120 fps (NTSC) / 100 fps (PAL) | |
| **Recording/ Play Function** | | |
| Recording (Max) NTSC | Max 60 fps(NTSC); Max 50 fps(PAL) | |
| Recording Resolution | 704x224(NTSC); 704x272(PAL) | |
| Record Quality | High / Normal / Low | |
| Compressed Picture | Storage: MJPEG | |
| Recording Control | Normal / Schedule / Event | |
| Pre-Alarm Record | 8MB | |
| Post-Alarm Record | 5 ~ 30 seconds | |
| Playback Mode | Time list / event list / Date & Time search | |
| **Backup and Copy** | | |
| Backup | Event Backup / Video Data backup | |
| Copy | Copy media files via memory flash | |
| Backup file play | Client software to play files | |
| **Other Function** | | |
| Device ID setup | 1 ~ 4000 ID setup | 1 ~ 255 ID setup |
| Power off Record | Off / or after 1 ~ 30 minutes power off recording | |
| Operation Mode | Record / Play | |
| Monitoring | Firmware Watchdog | |
| Recovery | Auto-Reboot by Watchdog | |
| Operation Mode | Duplex (Record +Playback ) | |
| Control Device | Front key/ Remote controller | |
| Daylight Saving | Supported | |

| | | |
|---|---|---|
| Language | English / Chinese | |
| Motion Detect | 16 x16 grids camera for all channel | |
| Alarm | Alarm in x 4 / Relay out x 1 | Alarm in x 8 / Relay out x 1 |
| Video Loss | Camera video loss detection and buzzer warning | |
| Back-Up | USB 2.0 | |
| Storage | 2.5” HDD x 1 | |
| CF card | 4 GB supported (CF card minimize size need 512 MB )<br>Type I support Sandisk, KingSton, A-DATA | |
| Max number of event list/ Time file list | Event list 200 / Time list 100 (HDD) | |
| Firmware Upgrade | Support USB firmware upgrade | |
| Shock Protection | Support Hardware Shock Protection | |
| Audio Input | RCA x 1 0.5~1.4Vp-p@20kΩ (mini din) | |
| HDD Record Mode | Full stop / overwrite | |
| Key Lock | Yes | |
| Dwell Time | Programmable with adjustable dwell time. 0 ~ 999 seconds | |
| Real Time clock (RTC) | Correct data and time auto adjustment | |
| Remote Control | Support PHILIPS RC5, NEC | |
| Power Supply | +9V DC & +32V DC | |
| Operating Temperature | + 5 ºC ~ + 55 ºC | |